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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,932	11/25/2003	K.R. Udayakumar	TI 35507	8320

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EXAMINER

VINH, LAN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action
Before the Filing of an Appeal Brief**

Application No.

10/721,932

Applicant(s)

UDAYAKUMAR ET AL.

Examiner

Lan Vinh

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 05 May 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: 6 and 16.
Claim(s) rejected: 1-5, 7-15 and 17-21.
Claim(s) withdrawn from consideration: 22-25.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attachment.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). _____.
13. ☐ Other: _____.

Lan Vinh
AU 1765

Response to Arguments

1.. Applicant's arguments filed 5/5/2006 have been fully considered but they are not persuasive.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning to combine Yang with Song and Tomioka, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The applicants argue that no motivation exists for even combining just Yang and Song because the Examiner is incorrect as to the motivation to combine Yang and Song, individually, for a number of reasons. First, a list of materials in a patent application does not, alone, indicate that the materials in the list may be arbitrarily exchanged for one another. Additional information or discussion regarding the list would be required to draw such a conclusion that the materials may be arbitrarily exchanged. No such additional information or discussion exists in Song. Second, Yang, or so it appears, is directed specifically to silicon nitride (Si₃N₄) etch stop layer (IMD2 18). Yang teaches or suggests no other material that the etch stop layer (IMD2 18) might comprise. Because Yang devotes so much attention to the silicon nitride (Si₃N₄) etch stop layer (IMD2 18), without even presenting any further examples, one skilled in the

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art would not be motivated to exchange the silicon nitride (Si_3N_4) for any other material and particularly not for the aluminum oxide of Song, as the Examiner suggests. (See, Yang at column 5, lines 55-65). This argument is unpersuasive for the following reasons: the list of materials, as disclosed by Song, specifically indicates that a SiN layer or an aluminum oxide layer can be used as a etch stop layer/establishes the equivalency of SiN and aluminum oxide as a etch stop material. It is also noted that "However substitution of equivalency requires no express motivation as long as the prior art recognizes the equivalency. In re claim Fount 213 USPQ 532 (CCPA 1982); In re Siebentritt 152 USPQ 618 (CCPA 1967)". Yang is not directed specifically to silicon nitride (Si_3N_4) as an etch stop layer (IMD2 18) since Yang discloses that "(IMD2) layer 18 is deposited, preferably composed of a first inorganic insulator such as a PECVD SiN", which implies that non-preferred materials can be used for the etch stop layer 18. Thus, one skilled in the art, reading Yang and Song, would be motivated to exchange the silicon nitride (Si_3N_4) of Yang for the aluminum oxide of Song to produce the claimed feature as required in claim 1

The applicants argue that there is no motivation to combine Yang and Tomioka, as suggested by the examiner, since there is no "conventional in the art" statement found in Tomioka at or proximate the discussion of the CO because the paragraph reciting the CO flow rate only recites: A gas mixture of C_4F_8 (flow rate: 10 sccm) and CO (flow rate: 200 sccm) is used as the etching gas, and the gas pressure is set to 10 mTor, thus, this clearly does not indicate that the CO flow rate is conventional and Tomioka teaches the use of CO instead of CO_2 . This argument is unpersuasive because while it is true that

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there is no "conventional in the art" statement found in Tomioka, it is also true that the reference of Tomioka (US Patent 5,897,713) discloses using a mixture comprises CO (flow rate : 200 sccm, in one embodiment Tomioka also discloses the use of CO₂ (col 6, lines 20-25)) which implies that it is known in the art of semiconductor manufacturing to use CO/CO₂ having a flow rate of 200 sccm/300 sccm /it is conventional to use CO/CO₂ having a flow rate of 200 sccm/300 sccm in the art of semiconductor manufacturing. Thus, one skilled in the art at the time the invention was made would have found it obvious to employ Tomioka teaching in Yang method to produce the claimed feature as required in claim 1

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 571 272 1471.

The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571 272 1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'LV' followed by a stylized flourish.

LV

May 16, 2006